Volume 19
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METEORITE NEWSLETTER

JAPANESE COLLECTION OF ANTARCTIC METEORITES

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INTRODUCTION

Classification and Description of Antarctic Meteorites

This newsletter reports 280 Yamato98 meteorites larger than 5 grams. They include 8 CM2 chondrites, 8 achondrites (5 eucrites, 2 diogenites, and 1 howardite), 2 primitive achondrites (1 acapulcoite and 1 lodranite).

Followings are the members for the classifications of this volume:

Macroscopic descriptions of meteorites;
Kojima H. and Kiso H.
Microscopic descriptions and classifications of chondrites;
Kojima H. and Imae N.
Microscopic descriptions and classifications of achondrites;
Yamaguchi A.

Sample Request Deadline

Sample requests that are received by the curator before **May 25, 2010**, will be reviewed by the Committee on Antarctic Meteorite Research (CAMR), which will meet in June, 2010. Requests that are received after the May 25 deadline may be delayed for review until the CAMR meeting in December, 2010.

All sample requests should be made in writing to:

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NIPR Sample Allocation Policies and the Request Form are also available in the following web site.
http://yamato.nipr.ac.jp/AMRC/EN/index1.html

Meteorite	C.	Wt.(g)	%Fa	Range	%Fs	Range	F.	W.	Comments
Y981115	H4	12.59	19.1	18.2-23.4	17.4	15.8-20.1	A/B	A	
Y981116	H4	13.47	19.3	18.4-20.7	17.0	16.1-18.5	A/B	A	
Y981120	H4	14.79	19.1	17.8-21.7	17.1	15.8-19.3	B	A	
Y981121	H3	13.53	19.6	17.0-24.4	17.6	15.4-23.7	A/B	A	
Y981123	H4	6.26	19.1	18.0-20.4	16.8	15.6-19.6	A/B	A	
Y981130	H5	15.41	20.0	17.8-23.9	17.1	16.3-18.1	A	A	
Y981132	L6	23.61	24.7	24.1-25.6	20.7	19.7-21.5	A	A	
Y981133	H6	46.87	17.6	16.7-18.7	15.3	14.5-16.3	B	A	
Y981134	H5	13.93	18.8	16.7-21.6	16.6	15.9-17.7	A	A	
Y981135	H5	10.53	19.4	18.1-22.4	16.8	15.8-18.1	A	A	a thin shock vein
Y981139	H3	12.34	17.8	11.2-20.4	15.8	10.9-20.3	A	A	a thin shock vein
Y981140	H3	29.57	15.8	0.6-19.1	15.0	2.6-23.4	A	A	
Y981143	H5	5.51	19.3	18.1-21.7	17.5	16.3-19.3	A	A	
Y981144	H5	6.15	18.2	17.1-21.1	16.1	6.7-21.1	A	A	see separate entry
Y981148	H6	25.36	17.0	16.2-17.7	15.1	14.2-15.7	A	A	
Y981149	L6	8.64	25.4	23.5-26.4	21.1	19.6-22.5	A	A	
Y981150	H4	7.75	20.1	19.0-23.9	17.8	16.6-22.7	A	A	
Y981159	H4	8.85	18.6	17.6-20.1	16.8	14.1-21.3	A	A	
Y981162	H5	53.72	17.4	16.2-18.3	15.0	14.2-15.9	A	A	
Y981163	H6	40.18	18.5	17.0-19.3	16.6	15.7-19.1	A/B	A	
Y981164	L6	23.15	24.1	23.1-24.8	20.7	19.2-22.4	A/B	A	
Y981165	Euc	49.79					A		see separate entry
Y981166	H5	46.35	17.6	17.0-18.0	15.4	14.3-16.5	A	A	
Y981167	H4	31.29	17.5	16.8-18.8	15.1	14.2-15.8	A/B	A	
Y981169	H4	8.34	19.2	18.2-22.2	16.7	15.9-18.9	A/B	A	
Y981173	H4	8.92	18.3	17.1-20.6	16.6	15.5-20.0	A	A	
Y981174	L6	43.91	24.0	23.2-24.6	20.3	19.0-23.7	A	A	see separate entry
Y981175	H3	8.28	18.0	7.6-34.2	15.6	6.9-18.0	A/B	A	
Y981176	H5	11.13	19.4	18.1-23.4	17.4	16.2-19.2	A	B	
Y981186	H3	26.95	17.1	0.7-18.9	14.9	5.5-24.0	B	A	
Y981188	H6	24.90	17.6	16.7-18.5	15.6	14.2-16.8	A/B	B	
Y981189	H5	17.30	18.7	17.6-20.3	16.8	15.4-21.7	A	B	
Y981195	H5	6.77	19.2	18.0-19.9	16.7	15.4-17.5	A/B	B	
Y981198	H5	5.03	19.1	18.1-20.9	16.9	15.1-21.3	A	B	
Y981200	H4	12.23	19.3	18.4-22.9	16.8	15.6-19.4	A	B	
Y981202	L6	95.46	24.3	23.8-25.7	20.8	19.7-22.1	A/B	A	see separate entry
Y981204	L6	7.75	24.9	23.5-26.2	21.2	20.4-22.7	A	A	
Y981207	L4	5.80	23.8	22.6-24.8	20.3	9.4-25.8	A	A	
Y981208	LL3	24.32	3.6	0.2-32.0	1.6	0.4-5.8	A	A	
Y981209	L6	16.58	25.7	24.4-28.1	22.2	20.5-24.5	A	A	shock veins
Y981210	H5	26.57	18.1	17.2-19.0	15.7	14.7-16.9	A	B	
Y981214	LL6	17.82	26.7	24.9-31.4	23.4	21.9-28.1	A	A	see separate entry

Meteorite	C.	Wt.(g)	%Fa	Range	%Fs	Range	F.	W.	Comments
Y981215	H5	5.75	20.4	19.8-21.1	18.2	16.8-21.2	A	A	
Y981218	L4	7.12	24.2	22.7-26.6	20.7	19.4-22.5	A	A	
Y981219	H4	23.65	17.9	16.7-20.3	16.0	10.8-20.7	A	A	
Y981221	H3	29.56	9.3	0.4-27.0	8.7	1.8-26.2	A/B	B	see separate entry
Y981222	H4	12.62	19.9	18.8-21.6	17.7	15.5-19.3	A/B	A/B	
Y981223	H4	25.82	17.9	17.2-19.2	15.6	14.5-16.7	A/B	A/B	
Y981224	H4	27.15	18.2	16.5-21.0	16.1	14.2-17.5	A	A/B	
Y981225	H5	5.71	20.8	20.0-25.4	17.9	16.5-18.9	A	A/B	
Y981229	H4	46.09	18.5	16.7-20.3	15.7	8.8-17.9	A/B	B	
Y981232	H3	6.57	16.0	15.0-16.9	14.5	13.5-16.0	A	B	
Y981233	H5	25.30	18.2	17.4-19.0	16.1	15.3-17.9	A	A/B	
Y981234	H6	17.25	20.0	18.9-22.3	17.3	15.8-18.9	A	A	
Y981235	H6	28.60	17.2	16.5-18.7	15.0	13.9-16.4	A	B	
Y981236	H5	10.59	18.8	18.2-21.5	16.5	15.9-18.3	A	B	
Y981237	L6	18.83	25.5	24.1-27.6	21.7	20.9-23.9	A	A	
Y981238	H5	15.70	18.7	17.3-20.5	16.6	15.6-17.5	A	B/C	
Y981245	H4	29.08	17.9	16.2-19.0	15.9	15.0-17.1	A	A/B	
Y981246	H5	14.38	19.5	17.5-21.2	17.1	15.7-18.3	A/B	A	
Y981247	Dio	5.57			24.0	22.3-27.2	A/B		see separate entry
Y981252	H4	11.51	18.7	17.3-24.1	16.4	15.0-21.2	A/B	A	
Y981253	H5	131.12	17.8	16.9-18.6	15.5	14.4-17.4	A	A	
Y981256	H6	9.61	19.8	18.5-21.0	17.9	16.2-22.0	A/B	A	
Y981266	CM2	11.80	11.2	0.3-60.7	2.5	0.6-10.2	B	A	
Y981268	CM2	6.63	10.9	0.4-34.0	2.3	0.4-24.0	A/B	A	Paired with Y981266
Y981271	CM2	12.13	5.8	0.3-35.4	2.9	0.4-6.7	A	A	Paired with Y981266
Y981274	L3	478.69	23.1	14.2-25.5	15.1	3.7-31.7	A	A	see separate entry
Y981275	L3	65.73	23.5	8.4-26.2	15.7	4.7-34.3	A	A	see separate entry
Y981277	L3	52.07	22.3	13.8-24.9	14.0	3.8-26.5	A	A	see separate entry
Y981278	L3	146.41	23.1	17.3-25.2	13.7	3.0-34.0	A	A	see separate entry
Y981280	H5	6.17	20.2	18.6-22.4	17.5	16.1-22.7	A	B	
Y981282	H6	34.09	17.7	16.6-18.6	15.8	15.0-16.4	A	A	
Y981283	L3	17.15	25.5	20.3-28.3	18.1	8.0-32.3	A	A	
Y981285	L3	16.37	25.1	6.0-28.6	18.6	8.6-30.0	A	A	
Y981286	CM2	19.30	4.7	0.2-53.3	2.3	0.5-6.6	A/B	A	
Y981288	CM2	6.72	7.3	0.2-36.1	2.7	0.5-7.4	A/B	A	Paired with Y981286
Y981290	CM2	6.36	9.4	0.3-39.4	3.9	0.9-8.2	A	A	
Y981299	H4	31.16	18.0	17.0-19.2	15.6	13.8-17.1	A	A	
Y981301	L3	126.40	25.3	22.8-30.9	14.6	4.3-23.9	A	A	
Y981302	L3	147.96	24.1	22.2-25.4	12.1	2.0-22.1	A	A	
Y981303	L3	43.89	23.9	13.9-26.2	13.5	2.0-23.0	A	A	
Y981304	L3	102.79	23.8	19.3-26.2	11.8	2.7-30.2	A	A	
Y981305	L3	228.72	22.4	12.3-25.8	13.0	5.5-24.8	A	A	

Meteorite	C.	Wt.(g)	%Fa	Range	%Fs	Range	F.	W.	Comments
Y981307	H4	68.91	17.5	15.7-19.7	15.1	13.6-16.1	A	A	
Y981308	H5	86.92	17.1	16.5-17.9	14.8	13.9-15.4	A	A	
Y981309	H4	5.34	18.9	17.9-21.0	16.6	15.6-19.3	A	A	
Y981318	H5	5.81	19.1	17.6-20.3	16.7	14.9-18.4	A	A	
Y981319	H4	7.73	19.7	18.3-24.8	17.0	15.0-20.7	A/B	A	
Y981321	H4	12.73	19.1	17.9-21.0	17.0	15.6-20.6	A	A	
Y981326	L6	15.00	25.6	23.8-28.0	21.1	19.3-23.0	A	A	
Y981327	L3	42.04	16.3	0.5-29.3	7.7	1.1-35.2	B	A	
Y981333	H4	133.65	18.1	17.4-18.8	15.5	14.5-16.5	A/B	B	
Y981337	L6	59.39	22.8	22.0-24.3	19.3	18.1-21.6	B	B	
Y981338	L6	7.15	25.3	24.2-28.6	21.4	20.8-22.8	A/B	A	
Y981346	H6	21.89	17.0	16.2-18.1	15.0	14.4-16.2	A	A	
Y981350	L6	18.34	25.1	23.4-26.6	21.3	20.2-22.3	A	A	
Y981351	L5	13.22	25.3	24.1-27.2	22.2	20.6-27.2	A	A	
Y981359	H5	5.50	19.0	18.0-20.6	16.7	15.0-20.1	A	B	
Y981361	H4	13.42	18.1	16.4-19.4	16.7	15.3-21.1	A	A	
Y981366	L6	8.02	25.8	24.6-27.2	22.2	20.4-28.6	A	A	
Y981369	L6	5.96	25.3	24.2-27.6	21.8	20.4-24.8	A	A	see separate entry
Y981380	L3	5.15	23.5	22.7-24.9	20.4	18.3-23.5	A	A	
Y981381	H4	5.59	19.0	18.1-22.3	16.6	15.7-17.7	A	B	
Y981393	H5	5.03	19.4	17.8-23.4	17.0	15.1-21.9	A/B	A/B	
Y981398	L5	6.92	25.5	24.0-28.5	21.4	19.3-24.0	A/B	A	
Y981399	H3	24.57					A	B	
Y981405	L6	18.58	25.7	24.1-27.8	21.7	20.5-23.5	A	A	see separate entry
Y981412	H6	7.68	19.9	19.0-20.6	17.5	16.1-18.4	A	A	
Y981413	L6	40.86	23.1	21.5-24.4	19.8	18.3-23.1	A	A	see separate entry
Y981414	L6	11.53	25.4	23.9-26.8	21.7	20.8-22.9	A	A	see separate entry
Y981415	L6	10.30	25.4	23.9-27.4	22.1	20.4-25.0	A	A	Similar to Y981413.
Y981416	L6	33.65	22.9	22.0-24.1	19.1	17.8-20.1	A	A	Similar to Y981413.
Y981417	L6	8.26	25.9	23.8-28.9	21.6	20.9-23.6	A	A	Many shock veins.
Y981418	H4	6.67	19.5	18.3-23.0	16.8	15.5-19.1	A	A	
Y981419	L6	187.79	23.4	22.7-24.1	19.6	17.9-21.1	B	A	
Y981420	L6	25.49	23.5	22.3-24.4	19.8	18.8-21.4	A	A	see separate entry
Y981425	H4	15.19	18.9	18.0-21.7	17.4	15.2-20.6	A	B	
Y981428	H3	5.00	18.6	9.8-32.3	16.4	3.8-21.8	A	A/B	
Y981436	H4	26.42	17.6	16.4-18.5	15.3	13.8-15.9	A	B	
Y981437	H4	5.15	19.2	17.8-20.7	17.6	16.1-22.2	A	A	
Y981438	H4	370.88	17.4	16.0-18.1	14.9	13.6-17.0	A/B	A	
Y981441	L6	5.49	25.6	23.7-30.3	21.4	20.4-22.3	A	A	see separate entry
Y981442	L6	5.33	25.9	24.5-28.2	22.1	20.3-25.5	A	A	
Y981449	H5	15.30	19.0	18.2-21.4	16.7	15.2-22.0	A	B	
Y981453	H4	8.76	19.6	18.1-22.8	17.4	15.0-20.7	A	A	

Meteorite	C.	Wt.(g)	%Fa	Range	%Fs	Range	F.	W.	Comments
Y981455	H4	7.25	19.5	17.9-21.1	17.3	16.1-19.1	A	A	
Y981456	H4	11.58	19.3	18.2-21.8	16.8	15.4-19.2	A	A	
Y981457	H4	17.46	19.5	18.1-22.2	16.9	15.7-19.1	A	A	
Y981460	H5	7.92	18.8	16.2-20.8	16.7	15.1-17.3	A	B	
Y981463	L6	61.79	23.0	22.1-23.7	19.5	18.4-22.5	A/B	A	
Y981469	L5	5.02	25.2	23.6-29.1	21.3	20.1-22.4	A	A	
Y981471	L6	5.11	25.3	24.1-26.9	21.9	20.8-25.0	A	A	
Y981474	L6	6.68	25.5	24.0-29.2	22.3	21.6-24.0	A	A	
Y981475	L6	5.47	25.5	23.7-26.7	21.9	19.7-25.9	A	A	
Y981480	L5	9.17	23.4	22.0-27.5	19.9	19.0-20.7	A	A	
Y981489	H6	7.08	18.8	18.1-20.1	16.4	15.8-17.2	A	A/B	
Y981490	L3	183.99	22.5	12.4-24.9	13.9	5.5-30.4	A	A	
Y981493	H5	19.76	19.2	16.8-22.7	17.3	16.4-18.9	A/B	A/B	
Y981494	L6	13.45	25.7	24.5-27.6	22.2	21.0-25.2	A/B	A	
Y981495	L6	9.80	25.8	23.3-29.7	21.8	21.0-22.6	A	A	
Y981496	L6	24.58	23.6	22.8-25.5	20.1	19.0-21.3	A	A	
Y981497	H5	22.93	17.7	16.7-19.9	14.9	14.5-15.5	A/B	A	
Y981498	H4	9.92	19.2	18.2-20.8	17.0	15.9-17.5	A	A/B	
Y981499	L6	139.14	24.0	23.1-25.5	19.8	18.7-21.1	A/B	A	
Y981501	L6	31.89	23.4	21.3-24.6	19.8	18.6-22.1	A/B	A	
Y981502	H6	15.56	19.2	18.5-20.1	17.0	16.1-18.2	A/B	B	
Y981503	H4	6.49	18.9	18.0-21.0	16.8	15.7-20.2	A	A/B	
Y981504	L3	6.89	25.8	17.7-30.6	18.7	8.0-25.1	A	A	
Y981505	Aca	56.95	8.0	7.1-8.8	9.8	8.7-10.8	A		see separate entry
Y981507	H5	10.81	19.6	18.4-22.4	17.0	10.4-21.2	A	A/B	
Y981510	H4	9.08	19.6	18.3-21.5	18.0	15.5-20.6	A	A/B	
Y981513	H4	17.65	21.3	20.0-22.7	17.7	11.8-20.1	A	A/B	
Y981514	L5	8.71	23.5	22.2-25.6	20.5	18.8-23.6	A	A	
Y981515	L6	9.14	25.8	24.2-27.7	21.9	20.8-25.0	A	A	
Y981516	L6	5.58	25.6	24.2-27.8	22.2	21.1-24.2	A	A	
Y981522	L6	37.07	23.9	22.7-26.4	19.9	17.7-21.9	A	A	
Y981523	L6	45.47	23.5	22.3-25.2	19.8	18.0-22.2	B	A	
Y981525	L6	68.07	23.8	22.4-25.1	19.8	18.0-21.5	A	A	
Y981526	L6	28.07	23.6	22.2-25.2	19.5	18.8-20.7	A	A	
Y981527	L6	8.78	25.8	24.5-28.0	21.6	20.6-23.6	A	A	
Y981530	H4	5.57	19.3	18.2-20.5	17.0	15.4-19.2	A	A/B	
Y981536	H3	7.61	16.8	15.7-17.8	15.1	7.3-20.7	A	B	
Y981539	H6	10.15	20.1	18.5-23.8	18.4	16.4-24.4	A	A/B	
Y981540	H5	11.52	19.5	18.2-21.0	17.2	16.3-21.3	A	A	
Y981545	H4	28.26	17.4	16.2-18.1	15.3	14.3-16.0	A	B	
Y981547	H6	7.09	19.3	18.1-23.1	16.8	15.2-19.0	A	A/B	
Y981548	H6	7.35	19.1	17.4-20.0	16.9	16.3-18.8	A/B	B	

Meteorite	C.	Wt.(g)	%Fa	Range	%Fs	Range	F.	W.	Comments
Y981549	H6	13.50	19.5	17.7-20.7	17.2	16.2-18.3	B	B	
Y981550	H6	18.10	19.5	18.4-20.6	17.3	16.0-19.9	B	B	
Y981551	H5	6.01	19.6	18.0-21.8	17.9	16.5-21.8	A	B/C	
Y981553	L6	42.00	23.8	22.6-24.8	20.1	18.9-22.4	A	A	
Y981554	L6	30.26	23.6	22.2-24.6	19.8	19.2-20.6	A/B	A	
Y981556	L5	26.78	23.0	22.1-24.1	19.5	18.0-22.1	A	A	
Y981558	L5	7.28	25.1	23.1-28.8	20.9	19.3-22.0	A/B	A	
Y981563	H4	7.04	18.6	16.9-21.1	16.8	14.6-20.8	A	A	
Y981575	L6	11.86	25.3	24.1-26.9	21.8	20.4-24.2	A	A	
Y981576	L6	34.78	23.6	22.5-24.7	20.4	18.8-22.0	A/B	A	
Y981581	L6	6.59	25.0	23.7-26.6	21.3	20.3-22.3	A	A	
Y981582	Dio	5.88			24.0	22.3-25.0	A		see separate entry
Y981584	LL6	10.92	28.6	27.7-30.3	24.0	23.7-24.1	A/B	A	
Y981585	LL6	7.83	28.8	27.0-32.2	23.6	22.8-24.9	B	A	
Y981586	H6	7.29	18.9	16.8-21.2	17.2	16.1-20.2	A	B	
Y981588	L3	25.88	23.5	12.2-26.3	11.9	3.9-24.7	A	A	
Y981591	L3	7.10	25.6	22.2-28.0	18.9	6.2-42.1	A	A	
Y981593	H6	27.39	18.8	17.6-19.8	16.1	15.0-16.7	B	B	
Y981594	H4	9.14	19.2	17.8-22.6	16.9	16.0-19.3	A	B	
Y981595	H5	26.66	17.9	17.2-18.8	15.9	15.0-17.0	A	A/B	
Y981597	LL6	12.98	28.3	27.2-29.6	23.4	21.5-24.7	A	A	
Y981598	LL6	8.06	28.4	26.8-29.5	23.3	22.7-23.8	A	A	Paired with Y981597
Y981600	H5	14.57	19.1	17.8-23.6	16.6	14.8-18.9	A	A/B	
Y981601	L4	15.61	25.6	24.1-28.6	20.8	10.3-23.8	A	A/B	
Y981602	L3	58.84	22.6	14.8-25.4	13.9	4.2-31.1	A	A	
Y981603	H6	12.46	19.9	18.6-21.0	17.7	16.8-20.9	A/B	A	see separate entry
Y981604	How	137.86					A		see separate entry
Y981605	L6	576.89	23.8	22.5-25.1	20.0	18.5-21.5	B	A	see separate entry
Y981606	L3	7.78	24.7	5.4-29.0	17.8	5.5-33.7	A	A	
Y981607	LL5	16.60	29.4	27.1-34.0	24.1	22.4-26.3	A	A	
Y981613	H4	27.45	16.7	16.0-17.2	14.6	13.4-16.1	A/B	A	
Y981615	L6	88.66	23.3	22.0-25.3	19.5	18.2-22.9	A	A	
Y981616	H4	40.30	17.1	16.0-18.3	14.9	13.6-15.8	A/B	A	
Y981617	Euc	134.67					A		see separate entry
Y981619	Lod	5.39	9.1	7.6-10.4	12.3	10.7-12.8	A		see separate entry
Y981621	L3	7.87	24.8	10.6-28.3	14.1	5.6-23.0	A	A	
Y981624	L4	5.89	25.5	24.7-27.2	21.6	19.7-24.7	A	A/B	
Y981625	Euc	8.67			48.5	47.1-49.3	A		see separate entry
Y981627	H4	39.39	17.3	15.8-18.1	15.1	14.3-15.9	A	B	
Y981629	L6	21.13	23.3	22.4-24.4	19.8	18.5-21.2	A	A/B	
Y981630	H4	15.92	19.2	18.2-22.8	17.3	16.1-19.3	A	A/B	
Y981631	H6	8.29	21.2	20.3-24.9	18.1	17.3-18.9	A	A	

Meteorite	C.	Wt.(g)	%Fa	Range	%Fs	Range	F.	W.	Comments
Y981632	CM2	5.53	3.1	0.3-43.3	3.8	0.5-33.4	A/B	A	
Y981633	LL6	20.71	29.8	26.3-31.0	23.9	21.2-25.3	A	A	see separate entry
Y981634	H6	92.66	17.4	16.0-18.3	15.1	14.0-15.8	A	A	
Y981638	Euc	11.39			48.9	47.5-50.3	A		see separate entry
Y981639	H6	10.71	19.0	18.4-19.6	16.6	14.9-17.4	A	A	
Y981643	H6	57.33	17.7	16.7-18.3	15.6	14.5-17.0	A	B	
Y981644	H5	143.44	17.2	15.9-18.4	15.3	14.3-16.4	A	A	
Y981646	Euc	171.10					A/B		see separate entry
Y981656	L3	26.62	17.4	1.4-29.0	11.1	0.6-26.8	A	A	
Y981657	H4	6.14	18.9	17.8-19.9	16.6	15.4-17.9	A	A	
Y981664	H3	22.58	10.9	0.3-27.7	9.1	1.0-32.6	A	A	
Y981678	L6	225.20	23.5	22.0-24.4	19.6	17.7-22.1	A	A	
Y981679	H5	12.49	20.2	19.1-23.8	17.9	16.7-25.4	A	A	
Y981684	L6	73.38	24.7	23.9-25.4	20.4	19.1-21.3	A	A	
Y981685	L6	767.60	25.0	23.6-27.2	21.0	20.1-24.1	A	A	
Y981687	H4	5.32	19.7	18.1-21.8	17.3	15.8-20.1	A	A	
Y981691	LL6	17.75	26.1	25.1-29.6	21.9	21.0-22.7	A	A	LL6/5 breccia
Y981695	H6	16.72	20.3	18.5-22.7	17.9	17.2-20.5	A	B	
Y981696	H5	20.89	18.9	17.8-20.0	16.6	16.0-17.8	A	A/B	
Y981697	LL3	16.77	25.7	14.2-31.1	21.1	8.9-29.6	A	A/B	
Y981700	LL4	9.68	25.7	24.3-30.1	21.8	20.9-23.2	A	A/B	
Y981702	H6	5.05	19.2	18.3-20.5	16.9	16.3-17.9	A	B	
Y981703	LL6	11.82	28.9	27.8-29.9	23.5	22.4-24.3	A	A	
Y981705	H3	74.10	17.5	13.3-18.7	12.9	4.9-22.6	A	B/C	
Y981706	H4	5.41	19.6	18.1-23.0	17.6	16.4-20.2	A	A	
Y981709	L6	82.24	24.6	23.6-25.4	20.9	20.3-21.2	A	A	
Y981712	L6	24.47	24.8	23.4-31.9	20.3	18.7-21.6	A	A	Severely shocked
Y981713	L6	28.66	24.4	23.6-25.8	20.4	19.5-21.3	A/B	A	
Y981715	LL4	11.08	28.7	27.5-33.3	23.5	22.2-24.2	A	A	
Y981716	H5	6.88	19.0	17.6-21.8	16.7	15.9-17.3	A	A/B	
Y981719	CM2	13.80	4.4	0.3-31.3			A/B	A	
Y981721	H4	15.24	19.7	18.4-25.5	17.9	16.2-26.0	A	A	
Y981722	LL6	22.86	29.4	28.5-30.0	23.7	22.7-26.3	A	A	
Y981730	H4	39.60	18.6	17.9-19.4	16.3	15.3-18.0	A	A	
Y981731	L6	319.84	25.0	23.7-26.2	20.8	19.6-21.7	A	A	
Y981732	L6	106.56	24.9	23.9-26.1	20.8	19.6-21.7	A	A	
Y981736	LL3	67.82	28.0	16.8-30.3	18.3	5.5-25.8	A	A	
Y981744	H3	21.13	17.7	0.4-28.8	12.4	2.5-24.2	A	A	
Y981745	H3	8.32	23.0	9.7-31.0	16.6	10.6-22.1	A	A	
Y981746	H3	6.25	23.3	17.2-28.4	16.1	4.8-24.8	A	A	
Y981752	L6	296.26	23.7	22.7-25.6	19.7	18.1-20.7	A	A	
Y981754	H4	5.16	19.7	18.3-22.6	17.9	16.3-22.2	A	A/B	

Meteorite	C.	Wt.(g)	%Fa	Range	%Fs	Range	F.	W.	Comments
Y981779	H4	17.27	18.3	2.1-22.4	16.9	14.9-24.3	A	A/B	
Y981782	L6	6.05	25.6	24.3-28.0	21.4	19.7-23.3	A	A/B	
Y981784	H6	19.15	19.5	17.5-22.3	17.0	14.9-20.8	A	A/B	
Y981808	H4	15.84	20.0	18.4-23.3	18.4	16.6-21.8	A/B	B	
Y981809	L6	16.24	26.0	23.7-29.1	22.1	20.4-23.9	A	A/B	
Y981823	H4	88.51	18.2	17.0-19.8	16.4	14.9-16.4	B	A/B	
Y981824	H4	85.69	17.8	16.9-18.5	15.3	14.4-16.1	B	A/B	
Y981825	H4	73.41	18.2	17.5-20.2	16.1	15.1-17.5	A/B	A/B	
Y981826	H4	45.53	18.3	17.4-18.9	16.0	14.8-19.2	A/B	A/B	
Y981827	H4	30.29	18.2	17.3-18.9	15.9	15.1-16.5	A/B	A/B	
Y981828	H5	35.46	17.6	16.7-18.7	15.4	14.6-16.4	A	A/B	
Y981829	H4	16.64	19.6	18.4-20.9	17.6	16.2-19.2	A/B	A/B	
Y981830	H4	16.92	19.6	18.9-21.2	17.4	16.1-19.8	A	A/B	
Y981831	H4	18.49	19.8	18.7-22.2	17.8	16.2-20.8	A	A	
Y981832	H4	14.01	19.7	18.3-22.9	17.3	16.4-21.0	A	A/B	
Y981833	H4	13.57	20.0	18.4-23.4	18.2	16.6-21.6	A	A	
Y981834	H4	6.62	20.1	19.1-23.4	18.1	16.7-20.8	A/B	A	
Y981835	H4	7.38	19.9	18.7-22.8	17.3	16.2-18.7	A/B	A	
Y981836	H4	4.83	19.9	18.3-23.2	17.6	16.3-22.6	A/B	B	
Y981860	H4	6.89	19.7	18.8-21.3	18.0	16.2-21.4	A/B	B	
Y981861	H4	5.02	19.8	18.7-23.0	17.4	15.9-19.9	A	A/B	
Y981862	H4	5.94	19.2	17.3-22.5	17.0	15.8-18.3	A	B	
Y981863	H4	5.42	19.6	18.6-21.3	17.7	16.3-22.1	A	B	
Y981894	L6	234.34	24.2	22.8-25.6	20.2	18.5-21.2	A	A/B	
Y981896	L6	15.47	25.3	23.1-29.3	21.8	20.7-26.6	A	B	
Y981897	H4	46.55	18.0	17.4-18.7	15.7	14.5-17.6	A/B	A/B	
Y981898	H4	22.62	17.8	16.2-19.0	15.5	14.3-16.7	A	B	
Y981900	L6	56.53	23.2	21.9-24.1	19.8	18.8-21.0	A/B	A/B	

Notes

C: classification F: fracturing W: weathering

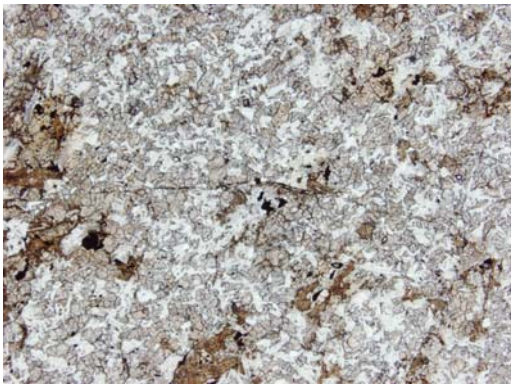
Fracturing index:
A: No or a few narrow cracks are visible.
B: Several cracks extend across exterior surface.
C: Severe cracks.

Weathering index:
A: Limonite haloes on metal particles and limonite veins are minor.
B: 7.5 to 35% of metal particles are weathered to limonite. Several limonite veins are visible.
C: Most metal particles are weathered to limonite.

Y981165

The section shows a fine-grained (~0.1-0.2 mm) ophitic to subophitic texture of pyroxene and plagioclase, and minor opaque minerals. Glassy mesostasis occurs. Low-Ca pyroxene contains very fine exsolution lamellae of augite. Pyroxene compositions are $Fs_{32-61}Wo_{7-39}$, and FeO/MnO = ~31. This rock is a eucrite.

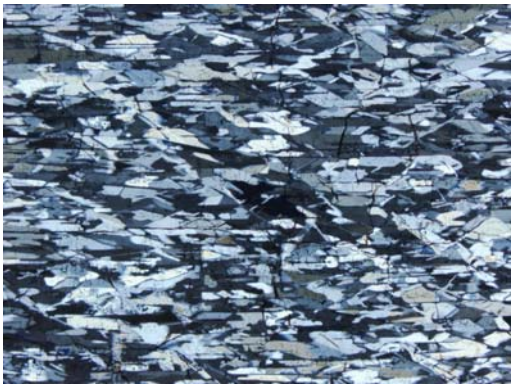
Width = 5.1 mm; Plane light.



Y981247 and Y981582

The sections show a very fine grained (20-100 μm) of laths and wedges of orthopyroxene whose longer axis are broadly aligned. Minute (a few μm) grains of Fe metals and troilite occur. Pyroxene compositions are $En_{71-76}Wo_2$ (FeO/MnO ~30). The similar unusual textures and mineral chemistry indicate that Y981247 and Y981582 are paired. These meteorites are diogenites.

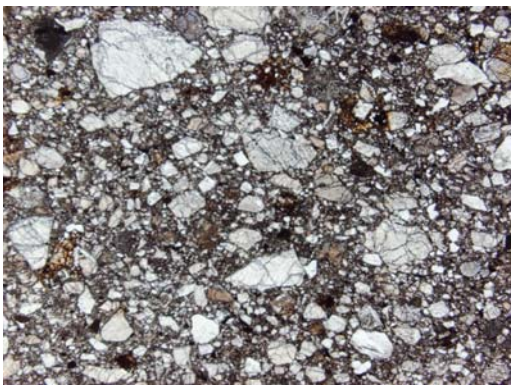
Width = 2.6 mm; Crossed polarized light.



Y981604

This section is a breccia composed of fragments of pyroxene and plagioclase, eucritic and dark melt clasts (<1.5 mm) set in a clastic matrix. Low-Ca pyroxene has composition $Fs_{23.4–60.5}$. This meteorite is a howardite.

Width = 5.1 mm; Plane light.



Y981617

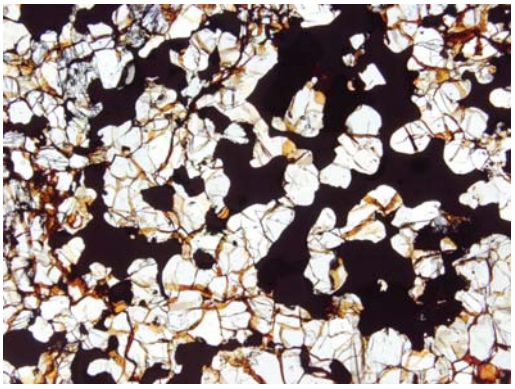
The section is a coarse-grained (several mm in size) gabbroic texture composed of pyroxene and plagioclase with minor silica and oxide minerals. Pyroxene is inverted pigeonite that contains thick lamellae and blebs of augite. Compositions of orthopyroxene are Fs_{45-48} (FeO/MnO ~30), and those of plagioclase are An_{87-90}. This meteorite is a eucrite

Width = 10.3 mm; Plane light.

Y981619

This section is composed of olivine and pyroxene with large irregular FeNi nodules with minor FeS. Olivine compositions are Fs_{8-10}, pyroxene, $En_{11-13}Wo_{1-3}$, and plagioclase, $An_{77-78}Or_{3-4}$. This meteorite is a lodranite.

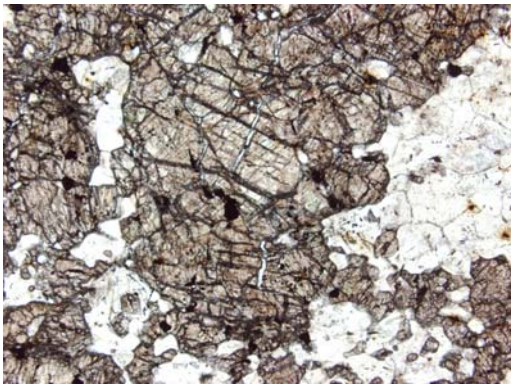
Width = 5.1 mm; Plane light.



Y981625

The section consists of coarse pyroxene grains (~5 mm) and finer plagioclase granules (~0.5 mm). Some plagioclase granules form a cluster (~3 mm). Compositions of low-Ca pyroxenes are $Fs_{47-49}Wo_{1-4}$; plagioclase, An_{87-93}. This meteorite is a eucrite

Width = 5.1 mm; Plane light.



Y981638

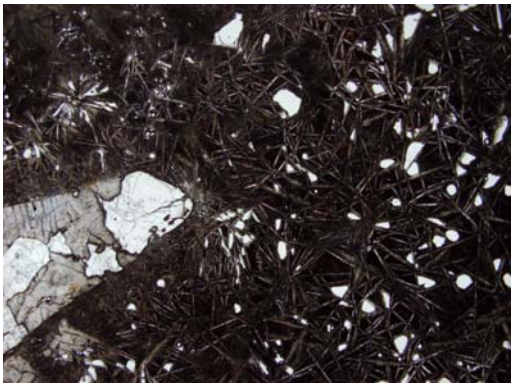
The section broadly consists of two portions; coarse-grained (several mm) and finer grained (~0.1-5 mm) granular portion. The coarse-grained portion is texturally similar to Y981617. It consists of pyroxene and plagioclase with minor minerals. Pyroxene is inverted pigeonite. Compositions of low-Ca pyroxenes are $Fs_{47-50}Wo_{2-4}$; plagioclase compositions range An_{87-91}. This meteorite is a eucrite.

Width = 10.3 mm; Plane light.

Y981646

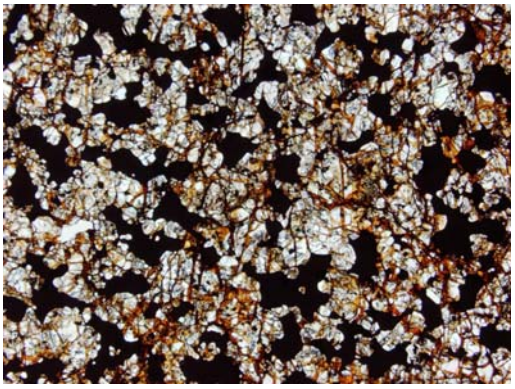
The section shows radiating fine-needles of pyroxene with dark glassy phases. It contains a clast of coarse-grained gabbro. Pyroxenes in dark portion are $Fs_{25-49}Wo_{3-14}$, and low-Ca pyroxene in the clast is Fs_{44-47}. FeO/MnO values of pyroxenes are ~28. This rock is a melt rock of eucrite.

Width = 10.3 mm; Plane light.



Y981505

The section displays a fine-grained granular texture composed of fine grains of olivine and pyroxene (~0.1-0.2 mm) and lager nodules of FeNi metals (<1 mm). Minute opaque minerals occur in mafic silicates. Olivines are Fa_{7-9}, and low-Ca pyroxenes are Fs_{9-12}. Plagioclases are Ab_{82-84}. This meteorite is an acapulcoite.



Width = 5.1 mm; Plane light.

Y981144	H5	A shock vein is observed.
Y981174	L6	A thin shock vein is observed.
Y981202	L6	A thin shock vein is observed.
Y981214	LL6	Shock melt veins and shock melt pockets are observed.
Y981221	H3	Clear glasses are observed in chondrules.
Y981274	L3	Clear glasses are observed.
Y981275	L3	Clear glasses are observed. Paired with Y981274.
Y981277	L3	Clear glasses are observed. Paired with Y981274.
Y981278	L3	Clear glasses are observed. Paired with Y981274.
Y981369	L6	Shock melt veins are observed.
Y981405	L6	Shock veins are observed.
Y981413	L6	Shock melt veins and shock melt pockets are observed.
Y981414	L6	It is similar to Y981413.
Y981420	L6	Shock darkening is remarkable.
Y981441	L6	Many shock melt veins and shock melt pockets are remarkable.
Y981603	H6	A thin shock vein is observed.
Y981605	L6	Shock veins are observed.
Y981633	LL6	A lithic igneous fragment with the polygonal morphology is observed.

REQUIREMENTS AND PROCEDURES FOR RESEARCH USING THE JAPANESE NIPR ANTARCTIC METEORITE COLLECTION

Requests for research samples are welcome from all qualified scientists. In general, requests are reviewed and considered by the Committee on Antarctic Meteorite Research (CAMR) of the National Institute of Polar Research (NIPR), which meets one to two times each year. Consortium-type sample requests may also be submitted. After a request is approved, samples are sent to the researcher from the Curator of Antarctic Meteorites, NIPR.

NIPR SAMPLE ALLOCATION POLICIES

I. Basic guidelines for allocation of meteorites at NIPR

1. All samples are provided on a loan basis, and remain the property of NIPR.
2. The pristine mass of the meteorite other than small rare meteorites after allocation must be at least 2/3 of the original mass. Pristine mass is defined as that portion of a specimen which has never been allocated, after initial polished thin section (PTS) preparation.
3. The pristine mass of small rare meteorites (less than 50 grams) after allocation must be at least 80% of the original mass. Rare meteorites are defined as meteorites other than type 4-6 ordinary chondrites, including rare type portions of large meteorites.
4. Allocations of any rare meteorite should generally be limited to samples less than 1 gram.
5. The term of the PTS loan will be for no more than 12 months. PTS should be returned promptly upon completion of the proposed research period.
6. PTS of any small meteorite (less than 5 grams) will not be, in general, loaned out but will be available for on-site use by scientists visiting NIPR.
7. Allocations will not be allowed until the meteorite has been announced and typed (classified) in a published issue of Meteorite News or an NIPR catalog.
8. Allocation from any meteorite that is under consortium study will generally not be permitted.
9. Investigators are strongly encouraged to limit requests to not more than 10 samples per request/review cycle. Higher numbers of samples may be approved, but in general, only 10 samples will be eligible for expeditious allocation processing. Investigators who request more than 10 samples should designate a subset for high-priority processing. A request for a chip for analysis plus a corresponding thin section for petrologic study of the same meteorite or clast will generally be counted as a single request, in relation to the 10 -sample limit.
10. Investigators are encouraged to use NIPR sample request forms. However, all sample requests that fully comply with the following guidelines will receive careful consideration.

    Requests should consist of three parts:

    a. Background information: title of the research project; for the requesting scientist, his or her name, affiliation and position (e.g., University of Paris, Professor), and office address, including phone and preferably FAX and email; and for any coinvestigators, their name, affiliation, and position.

    b. A text section, explaining the general nature and purpose of the proposed research, and including details on the justification for each individual sample request.

    c. A summary table, with columns for each of the following information categories:

    (1) Specimen name (e.g., Yamato-86032, or Y-86032).

    (2) Preferred weight (the weight of sample you believe is justified for the proposed research).

(3) Minimum weight (estimated weight below which the proposed research would not be worth pursuing; in general, approved allocations will be at or very near the *preferred* weight).
(4) An instruction regarding preferred sampling site (e.g., fusion crust, inner part, outer part, central, etc.).
(5) Sample form (e.g., single chip, cube, plate, fragments, many grains, powder, PTS, etc.).

II. Guidelines for expedited allocation by the Curator of the NIPR

The following guidelines set forth the conditions under which the Curator of Antarctic Meteorites at NIPR can allocate samples without review and approval by the CAMR. If the Curator has any doubt about the allocation of any sample, the request should be referred to CAMR.

1. Allocation of polished thin sections except for destructive analysis
   The original mass of the meteorite must be larger than 5 grams for type 4-6 ordinary chondrites or over 10 grams for all other meteorites.
2. Allocation of samples in a form other than PTS
   a. The total available pristine mass of the meteorite at NIPR must be larger than 20 grams for type 4-6 ordinary chondrites or over 50 grams for all other meteorites.
   b. Allocations of up to 5 grams or 1 weight % of the original mass of type 4-6 ordinary chondrites or up to 1 gram or 1 weight % of all other meteorites (whichever is less) can be made by the Curator.

SAMPLE DISTRIBUTION

1. Sublease (transfer) of sample is not permitted, except to persons listed as coinvestigators on the written request for samples. If sublease to a person not originally listed as coinvestigator becomes necessary, a new written request must be submitted to the Curator of Antarctic Meteorites.
2. Promptly upon completion of the proposed research, unused or remaining meteorite samples must be returned to the Curator of Antarctic Meteorites, NIPR.

REPORTING RESULTS

1. Research results should be reported promptly, preferably by presentation at the annual NIPR Symposium on Antarctic Meteorites, and/or full-length publication in the Polar Science. http://ees.elsevier.com/polar/
   The Symposium is held once each year, customarily in early June.
2. For the reference of the Curator of Antarctic Meteorites, investigators are requested to send three copies of each full-length paper published on allocated samples, and one copy of each abstract about them, to the Curator. Reference copies of articles and abstracts published through NIPR are not necessary.

Mail requests to: Dr. Hideyasu Kojima
Curator, Antarctic Meteorite Research Center
National Institute of Polar Research (NIPR)
10-3 Midori-cho, Tachikawa, Tokyo 190-8518, Japan
Phone: (81) 42-512-0641, FAX: (81) 42-528-3179
E-mail: curator@nipr.ac.jp

Send requests to: Antarctic Meteorite Research Center, National Institute of Polar Research, 10-3, Midori-cho, Tachikawa, Tokyo 190-8518, Japan, Phone (81) 42-512-0641, FAX (81) 42-528-3179, E-mail curator@nipr.ac.jp

No. [ ]

NIPR Research Program for Antarctic Meteorites

Research project: _____

Date: Period of the project (months):

Principal investigator

Name: Signature _____

Affiliation & position:

Office address:

Phone: ext. FAX:

E-mail:

Coinvestigator(s)

Name(s):

Affiliation(s) & position(s):

Description of research plan and justification for sample request:

(continue)

	specimen name	preferred weight	minimum weight	sampling instructions	sample form
	(e.g., Y-86032)	(e,g,, 0.25g)	(e.g., 0.1g)	(e.g., interior)	(e.g., chip(s))
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

received

Send requests to: Antarctic Meteorite Research Center, National Institute of Polar Research, 10-3, Midori-cho, Tachikawa, Tokyo 190-8518, Japan, Phone (81) 42-512-0641, FAX (81) 42-528-3179, E-mail curator@nipr.ac.jp

No.

received